

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended) A filter arrangement for filtering lubricating oil wherein the lubricating oil contains contaminants in the form of small particles, large particles and sludge, the filter arrangement comprising:

a first annular filter element having a top and a bottom and a filter media with a dirty side and a clean side for filtering relatively small particles from the lubricating oil, the first filter element having a first hollow core;

a second annular filter element having a filter media with a dirty side and a clean side for removing sludge from the lubricating oil, the second filter element being located beneath the first filter element and having a second hollow core;

a centrifugal separator coaxial with the filter elements for removing large particles from the lubricating oil prior to the lubricating oil entering the dirty sides of the first and second filter elements, the centrifugal separator being disposed adjacent to the top of the first filter element, and

a flow deflector element having an inlet in the hollow core of the second filter element and an outlet in the hollow core of the first filter element, the flow deflector imparting a spiraling motion to the lubricating oil filtered by the second as the lubricating oil enters the hollow core of the first filter element to mix with the lubricating oil filtered by the first filter element, and

a canister ~~housing~~ for containing the first and second filter elements and the centrifugal separator.

Claim 2 (Cancelled)

Claim 3 (Cancelled)

Claim 4 (Cancelled)

Claim 5 (Currently Amended) The filter arrangement of claim 4 1 wherein the centrifugal separator is configured as an array of fins disposed in an annular space between the filter elements and canister housing.

Claim 6 (Cancelled)

Claim 7 (Cancelled)

Claim 8 (Currently Amended) A filter for filtering a fluid comprising:
a canister housing having a first end with radially positioned inlet openings and a central opening disposed about a central axis, ~~and the canister~~ having a closed second end;
a first filter element having a first annular filter media defining a first substantially cylindrical hollow core, the first filter element being disposed adjacent the first end of the canister housing;
a second filter element having second annular filter media defining a second substantially cylindrical hollow core, the second filter element being stacked axially ~~on~~ beneath the first filter element;
the first and second filter elements being radially spaced from the housing wall to define an annular space; ~~, and~~
a flow deflecting element connecting the second hollow core to the first hollow core, the flow deflecting element comprising a flow deflector which imparts a ~~rotational component~~ spiraling motion to the fluid filtered by the second filter element as the fluid flows axially from the first hollow core to the second hollow core, wherein fluid flowing radially through the first filter media mixes with the ~~rotating~~ spiraling fluid which has been filtered by the second filter media before passing axially through the outlet of the filter cartridge; ~~and~~
~~a centrifugal separator disposed at the annular space between the filter elements and the housing wall for imparting rotary motion to fluid in the annular space.~~

Claim 9 (Previously Presented) The filter of claim 8, wherein the flow deflecting element comprises an annular channel formed about a core, the annular channel having the flow deflector therein.

Claim 10 (Previously Presented) The filter of claim 9, wherein the first flow deflector comprises at least one axially extending angularly displaced rib.

Claim 11 (Previously Presented) The filter of claim 10, wherein the rib extends across the annular channel and supports the core therein.

Claim 12 (Previously Presented) The filter of claim 11, wherein the core has at least one end closed to axial passage of fluid.

Claim 13 (Previously Presented) The filter of claim ~~13~~ 10, wherein the core is hollow and has a first closed end and a second open end, the open end being in the second hollow core defined by the second annular filter element.

Claim 14 (Currently Amended) The filter of claim ~~4~~ 8 further including a centrifugal separator comprises an array of fins which are oriented at an angle to the axis of the canister housing on the clean sides of the first and second filter elements.

Claim 15 (Currently Amended) The filter of claim 14 wherein the centrifugal separator comprises an array of fins is disposed around at the first filter adjacent to the first end of the canister.

Claim 16 (Previously Presented) The filter of claim 15 wherein the array of fins are disposed on a plastic ring which fits around the first filter.

Claim 17 (Previously Presented) The filter of claim 8 wherein the fluid is engine lubricating oil having small particles, large particles and sludge entrained therein, and wherein the small particles are filtered out by the first filter element, the large particles are precipitated out by the centrifugal separator, and the sludge filtered out by the second filter element.

Claim 18 (New) A filter cartridge for filtering a fluid comprising:

a canister formed about a longitudinal axis and having a first end with radially-disposed inlet openings and a centrally-disposed outlet opening, the canister having a closed second end;

a first filter element having a first annular filter media defining a first substantially cylindrical hollow core communicating directly with the outlet opening, the first filter element being disposed adjacent the first end of the canister and being radially spaced from the canister by an annular gap;

a second filter element having second annular filter media defining a second substantially cylindrical hollow core, the second filter element being stacked axially beneath the first filter element with the second hollow core communicating only with the first hollow core, and the second filter element being radially spaced from the canister by the annular gap;

a centrifugal separator disposed in the annular gap for imparting a rotational component to the fluid about the axis of the canister as the fluid enters the annular gap and flows in the annular gap toward the closed second end of the canister to remove contaminants from the fluid; and

a flow deflecting element directly connecting the second hollow core to the first

hollow core, the flow deflecting element comprising a flow deflector which imparts a spiraling motion to the fluid at a location where the fluid flows axially from the first hollow core into the second hollow core; whereby before passing the axially through the outlet of the filter cartridge, fluid flowing radially through the first filter media mixes with spiraling fluid which has been filtered by the second filter media and has passed through the flow deflecting element.

Claim 19 (New) The filter element of claim 18 wherein the second flow detector is an annular array of canted fins disposed around the first filter element and extending into the annular gap.

Claim 20 (New) The filter of claim 18 wherein the first and second filter elements are annular with the first filter element being stacked above the second filter element and wherein the flow deflecting element is disposed upstream of at least a majority of the filter media of the first filter element.

Claim 21 (New) The filter of claim 20 further including a flow deflecting element for imparting a non-axial component to filtered lubricating oil flowing from the clean side of the first filter element down past the clean side of the second filter element to mix with filtered lubricating oil from the first filter element.

Claim 22 (New) The filter of claim 21 wherein the centrifugal separator is configured as an array of fins disposed in the annular space between the filter elements and canister housing.

Claim 23 (New) A filter cartridge for filtering lubricating oil comprising:

a canister formed about a longitudinal axis and having a first end with radially-disposed inlet openings and a centrally-disposed outlet opening, the canister having a closed second end;

a first filter element having a first annular filter media defining a first substantially cylindrical hollow core communicating directly with the outlet opening and selected for primarily removing particulates, the first filter element being disposed adjacent the first end of the canister and being spaced radially from the canister by an annular gap;

a second filter element having second annular filter media defining a second substantially cylindrical hollow core and selected for primarily removing sludge, the second filter element being stacked axially beneath the first filter element with the second hollow core communicating only with the first hollow core, the second filter element being radially spaced from the canister by an annular gap;

a centrifugal separator disposed in the annular gap for imparting a rotational component to the lubricating oil as the lubricating oil flows down the gap;

a flow deflecting element directly connecting the second hollow core to the first hollow core, the flow deflecting element comprising a flow deflector within an annular channel formed about a central closed core, which flow deflector imparts spiral motion to the lubricating oil at a location where the lubricating oil flows axially from the second hollow core into the first hollow core, whereby before passing axially through the outlet of the filter cartridge, lubricating oil flowing radially through the first filter media mixes with spiraling lubricating oil which has been filtered by the second filter media and is passed through the flow deflecting element.

Claim 24 (New) The filter element of claim 23 wherein the centrifugal separator is an annular array of canted fins disposed around the first filter element and extending into the annular gap.

Claim 25 (New) The filter of claim 23, wherein the flow deflecting element comprises an annular channel formed about a core, the annular channel having the flow deflector therein.

Claim 26 (New) The filter of claim 25, wherein the flow deflector comprises at least one axially extending angularly displaced rib.

Claim 27 (New) The filter of claim 26, wherein the rib extends across the annular channel and supports the core therein.

Claim 28 (Previously Presented) The filter of claim 23, wherein the core has at least one end closed to axial passage of fluid.